IN THE CLAIMS:

Please amend claim 1 as follows:

1. (Currently amended) An ion implantation apparatus comprising:

an ion source section for generating ions;

an ion implantation section for implanting said ions generated in said ion source section, in a substrate,

a charged particle generator for generating charged particles having a charge opposite to that of said ions, the charge particle generator including a filament coil and a plasma generating chamber housing the filament coil;

a beam guide section having an inlet aperture for accepting said ions from said ion source section, an outlet aperture for delivering said ions into said ion implantation section, a guide tube extending from said inlet aperture to said outlet aperture, and an introducing section having an opening thereof in an internal surface of said guide tube, for introducing said charged particles from said charged particle generator into said guide tube; and

a shield section located between said opening of said introducing section and said outlet aperture, wherein the shield section has a portion adjacent ~~base of which being on~~ the internal ~~wall~~ surface of said guide tube and the portion of the shield section is ~~being~~ located at a position ~~having a space~~ spaced away from said opening of said introducing section, and wherein said shield section comprises a shield surface making an acute angle with the internal ~~wall~~ surface of said guide tube.

2. (Original) The ion implantation apparatus according to Claim 1, wherein said shield section comprises a shield surface intersecting with straight lines running from points on a surface specified by said opening of said introducing section to points on a surface of said substrate to be implanted with the ions, placed in said ion implantation section.

3. (Original) The ion implantation apparatus according to Claim 1, wherein said shield section comprises a shield surface extending from the vicinity of the edge of said opening to above said opening.

4. (Previously presented) The ion implantation apparatus according to Claim 1, wherein said shield section comprises a shield surface intersecting with straight lines running from points on a surface specified by said opening of said introducing section to points on a surface specified by said outlet aperture of said beam guide section.

5. (Previously presented) The ion implantation apparatus according to Claim 2, wherein said shield surface has a flat plate shape.

6. (Previously presented) The ion implantation apparatus according to Claim 2, wherein said shield section comprises a flat plate having said shield surface, and a frame member for supporting said flat plate.

REMARKS

This is intended as a full and complete response to the Office Action dated May 27, 2003, having a shortened statutory period for response set to expire on August 27, 2003.

The drawings are objected to under 37 CRF 1.83(a). The Examiner states that the drawings must show a shield section having a base adjacent the internal surface of said guide tube and the base located at a position having a space from said opening of said introducing section, wherein said shield section comprises a shield surface making an acute angle with the internal surface of said guide tube, as recited in claim 1 as amended. Applicants respectfully submit that the claimed structure is shown in Fig. 4. Applicants have further amended claim 1 to clarify that the base of the shield section 84 is actually a portion of the shield section 84 that is adjacent the internal surface 24d of the guide tube 24 and to clarify that the portion of the shield section 84 is located at a position spaced away from the opening 82 in the internal surface 24d as shown in Fig. 4. Applicants further submit that Fig. 4 supports the shield section 84 having a shield surface 84a that makes an acute angle with respect to the internal surface 24d. Therefore, Applicants respectfully request withdrawal of the objection to the drawings.

Claims 1-6 stand rejected under 35 U.S.C. § 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. The Examiner further states that there is insufficient antecedent basis for the limitation "the base" as claim 1 recites.

Applicants have amended claim 1 to more clearly recite that a portion of the shield section 84 is adjacent the internal surface 24d of the guide tube 24 and to clarify that the portion of the shield section 84 is located at a position spaced away from the opening 82 in the internal surface 24d as shown in Fig. 4. Applicant further submits that claim 1 as amended is not indefinite and recites features shown in the drawings as discussed above. Withdrawal of the rejection is respectfully requested.

Claims 1-6 stand rejected under 35 U.S.C. § 112, first paragraph, as containing subject matter which was not described in the specification in such a way as to

reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention.

As stated above, Applicants have amended claim 1 to be definite and have identified the support for claim 1 in Fig. 4. Withdrawal of the rejection is respectfully requested.

Claims 1-6 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over *Ono et al.* on grounds that the reference shows or suggests the claimed features understood by the Examiner. The Examiner further states that it would have been obvious to use a shield having a flat plate surface to make an acute angle with the internal wall surface of the guide tube in view of the knowledge of the industry as evidenced by U.S. Patent No. 5,378,899 (*Kimber*), and that it would have been obvious to use a frame member to mount the flat plate.

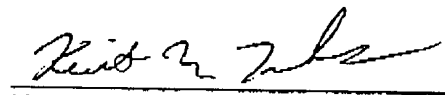
Ono et al. does not show or suggest a shield section having a base adjacent the internal surface of a guide tube and the base located at a position having a space from said opening of said introducing section, wherein said shield section comprises a shield surface making an acute angle with the internal surface of said guide tube as recited in claims 1-6. *Ono et al.* shows openings 42 in the sidewalls of Faraday cup 9 positioned such that they block the line of sight from the chamber 31 to the wafer. The openings 42 of *Ono et al.* are positioned at the opening of the introducing section such that they block some of the charged particles from entering the guide tube. Therefore, *Ono et al.* does not teach, show, or suggest an ion implantation apparatus comprising an ion source section for generating ions, an ion implantation section for implanting said ions, generated in said ion source section, in a substrate, a charged particle generator for generating charged particles having a charge opposite to that of said ions, the charge particle generator including a filament coil and a plasma generating chamber housing the filament coil, a beam guide section having an inlet aperture for accepting said ions from said ion source section, an outlet aperture for delivering said ions into said ion implantation section, a guide tube extending from said inlet aperture to said outlet aperture, and an introducing section having an opening thereof in an internal surface of said guide tube, for introducing said charged particles from said charged particle generator into said guide tube, and a shield section located between said opening of

said introducing section and said outlet aperture, the shield section having a base adjacent the internal surface of said guide tube and the base located at a position having a space from said opening of said introducing section, wherein said shield section comprises a shield surface making an acute angle with the internal surface of said guide tube, as recited in claim 1. Applicants respectfully request withdrawal of the rejection of claims 1-6.

Applicants further submit that *Kimber* in combination with *Ono et al.* does not teach, show, or suggest all of the limitations of claims 1-6. The combined references do not motivate use of the structure 82 of *Kimber* as the shield of *Ono et al.*, as the structure 82 of *Kimber* is an electron shower target that absorbs electrons and deflects electrons such that they hit a target wafer, while the shield of *Ono et al.* prevents particles from hitting a wafer. Furthermore, the apparatus of *Kimber* and *Ono et al.* are substantially different, as *Kimber* does not describe a charged particle generator including a filament coil and a plasma generating chamber, as recited in claim 1. Applicants respectfully request withdrawal of the rejection of claims 1-6.

In conclusion, the references cited by the Examiner, neither alone nor in combination, teach, show, or suggest the method or apparatus of the present invention. Having addressed all issues set out in the office action, Applicants respectfully submit that the claims are in condition for allowance and respectfully request that the claims be allowed.

Respectfully submitted,



Keith M. Tackett
Registration No. 32,008
MOSER, PATTERSON & SHERIDAN, L.L.P.
3040 Post Oak Blvd., Suite 1500
Houston, TX 77056
Telephone: (713) 623-4844
Facsimile: (713) 623-4846
Attorney for Applicant(s)